

## 6. THE CLAIMS

It is claimed:

1. A computer system comprising:

a) a first repeater;

5 b) a second repeater coupled to the first repeater; and

c) a third repeater coupled to the first repeater;

wherein the first repeater contains a first arbiter that arbitrates transactions between the first repeater and the second repeater and arbitrates transactions between the first repeater and the third repeater; and

10 wherein the second repeater receives transactions from the first repeater and contains a second arbiter that predicts receipt of transactions from the first repeater to the second repeater.

2. The computer system of claim 1, wherein the first repeater is an address repeater.

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3. The computer system of claim 1, wherein the first repeater, the second repeater, and the third repeater are address repeaters.

4. The computer system of claim 1, wherein the second arbiter is a distributed arbiter.

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5. The computer system of claim 1, wherein the second arbiter is a distributed arbiter that receives a signal from the third repeater.

6. A computer system comprising:

- a) a first repeater;
- b) a second repeater coupled to the first repeater; and
- c) a third repeater coupled to the first repeater;

5 wherein the first repeater contains a first arbiter that arbitrates transactions between the first repeater and the second repeater and that arbitrates transactions between the first repeater and the third repeater; and wherein the second repeater receives transactions from the first repeater and contains a second arbiter that predicts receipt of transactions from the first repeater to the third  
10 repeater.

7. The computer system of claim 6, wherein the first repeater is an address repeater.

8. The computer system of claim 6, wherein the first repeater, the second repeater, and  
15 the third repeater are address repeaters.

9. The computer system of claim 6, wherein the second arbiter is a distributed arbiter.

10. The computer system of claim 6, wherein the second arbiter is a distributed arbiter  
20 that receives a signal from the third repeater.

11. In a computer system containing a first repeater, a second repeater coupled to a plurality of clients, and a third repeater, the first repeater coupled to the second repeater

and the third repeater, a method of sending a transaction to a first of the plurality of clients comprising:

a) sending the transaction from a second of the plurality of clients to the second repeater;

5 b) storing the transaction in an outgoing request queue in the second repeater;

c) sending the transaction from the second repeater to the first repeater;

d) retrieving the transaction from the outgoing request queue in the second repeater;

and

e) sending the retrieved transaction from the second repeater to the first of the

10 plurality of clients.

12. The method of claim 11, further comprising sending, in a first cycle, the transaction from the first repeater to the third repeater.

15 13. The method of claim 12, further comprising sending, in the first cycle, a second transaction from the second repeater to the first repeater.

14. The method of claim 11, wherein the act of sending the transaction from the second repeater to the first repeater includes sending the transaction from a second address  
20 repeater to a first address repeater.

15. The method of claim 11, wherein the act of sending the retrieved transaction in the first of the plurality of clients includes sending the retrieved transaction to a client that

includes a central processing unit.

16. In a computer system containing a first repeater, a second repeater coupled to a client, and a third repeater, the first repeater coupled to the second repeater and the third

5 repeater, a method of sending a transaction to a first of the plurality of clients comprising:

- a) sending the transaction from the client to the second repeater;
- b) storing the transaction in an outgoing request queue in the second repeater;
- c) sending the transaction from the second repeater to the first repeater;
- d) retrieving the transaction from the outgoing request queue in the second repeater;

10 and

- e) sending the retrieved transaction from the second repeater to the client.

17. The method of claim 16, further comprising sending, in a first cycle, the transaction from the first repeater to the third repeater.

18. The method of claim 16, further comprising sending, in the first cycle, a second transaction from the second repeater to the first repeater.

19. The method of claim 16, wherein the act of sending the transaction from the second  
20 repeater to the first repeater includes sending the transaction from a second address repeater to a first address repeater.

20. The method of claim 16, wherein the act of sending the retrieved transaction to the client includes storing the retrieved transaction in a client that includes a central processing unit.

5 21. A computer system comprising:

- a) a first repeater;
- b) a second repeater coupled to the first repeater;
- c) a client coupled to the second repeater; and
- d) a third repeater coupled to the first repeater;

10 wherein the second repeater contains an outgoing request queue for storing transactions generated by the client; and  
wherein the second repeater is operable to retrieve a transaction from the outgoing request queue and send the transaction to the client.

15 22. The computer system of claim 21, wherein the first repeater is an address repeater.

23. The computer system of claim 21, wherein the first repeater, the second repeater, and the third repeater are address repeaters.

20 24. The computer system of claim 21, wherein the client includes a central processing unit.